

UNIVERSITY OF CALIFORNIA.

AGRICULTURAL EXPERIMENT STATION.

BULLETIN NO. 37.

Investigations of Wines From Rare Grape Varieties.

Grown by the Natoma Water and Mining Company, Folsom, 1884.

Cinsaut, or Boudales.

The Cinsaut is widely distributed in the south of France, from the Alps to the Pyrenees. It yields a heavy-bodied but delicate and highly-flavored wine, and for that reason is largely used in blends, to which it imparts its fine aroma, which is best developed at the age of about four years. It is, moreover, a most excellent table grape. The grape develops its best qualities on the warmest slopes of dry, stony hills. On light soils its life is not long unless well-sustained by fertilizers and with very short pruning; requires a good deal of heat; ripens early in second period.

From Folsom it is reported to be a fair bearer, not very vigorous and medium ripening. The grapes were received Sept. 25th, in excellent condition, and corresponded very accurately to the description of the typical grape. Bunches and berries large, fine and very attractive looking; berry rather firm, very sweet but with sufficient acid to render it very palatable. It was noted that the stems were already partly dry, while at the same time some of the berries were not fully ripe, showing that the unusually cool season had not supplied a fully adequate amount of heat for uniform maturity.

The fermentation of the 121.7 pounds, crushed on September 26th, began on the morning of Sept. 27th at a temperature of 68° F. and reached its maximum on Sept. 28th at a temperature of 78.8°, at which it remained for two days, the cellar temperature being 70°. It then gradually fell to the temperature of 68.9, that of the cellar on October 3d, when the murk was drawn off, on the ninth day from the crushing, showing a remarkably uniform and vigorous fermentation. The yield was 10.7 gallons from the above amount, or at the rate of 176.5 gallons per ton. Pomace, 11.6 per cent. color of murk quite full at that time.

Record of tasting. November 16th, 1884. (Pohndorff) Color failed considerably since the pressing, but expression splendid.

Of the sample presented to the convention committee, December 3d, 1884, the record is as follows:

Cinsaut. U. 30. This sample illustrated the fact that a grape, with as great an amount of coloring matter as the Cinsaut possesses, ought to be blended with other varieties, in order to hold the color. Soon after fermentation the deep color was lost and, as the sample stands, only a poor pinkish tint is preserved in it. On the other hand the quality of the wine is grand, its flavor and corresponding taste of a high expression, indicative of all that can be desired from a first-class red wine grape. The color

in U. 48, half Cinsaut, half Petite Sirah, is deep ruby, proper to the latter, and in no way more feeble than the Petite Sirah wine alone, while the quality of this blend is vastly superior to Sirah straight. It may be risky to deduce from the only instance of the Cinsaut wine U. 30 that the grapes of this vine will generally be constituted similarly, as to the precipitation of their coloring matter, and this should therefore not deter from adopting the variety which is a high grade one; in fact its aromatic ethers may be classed as of the most acceptable ones for a very superior wine.

February 9, 1885. (Pohndorff).—Samples in five and three-gallon kegs; color slightly faded; taste and bouquet of a pleasant wine of some quality; very easily developed.

Sample in a full eight-ounce vial: in an excellent state of development, brilliant and good color; taste clear and expressive.

Sample in half-full bottle, not tightly closed since November 26th, color less intense than that of the sample in the full vial; development that of wine of one year; taste perfect. The raising of wine from the Cinsaut grape seems thus to be very easy.

April 1, 1885. (E. W. H.).—Condition not quite clear; color pale pinkish, unsatisfactory; bouquet high, excellent and characteristic, fruity; body, medium; acid decided, a little pungent, perhaps from the effect of the thin staves. The astringency is somewhat low, and hence the wine does not dilute well; but as a whole is perhaps the most striking of all for high quality acquired in a short time.

Petit Bouschet.

This grape is of especial interest as being the direct result of the careful hybridization of the Aramon, a quantity grape of medium quality and yielding but little color, with the intensely colored Teinturier. Like the latter it has not only color in the skin but also in juice itself, and is therefore largely used in making up for deficiency of color in blends, while it is not, by itself, a grape of high quality. It is a heavy bearer even when short-pruned; is cultivated chiefly in the south of France; ripens early.

From Folsom the Petit Bouschet is reported to be a medium bearer, of good vigor, and medium ripening time. Lots were shipped from Folsom on the 19th, and again on the 24th of September. The latter was altogether over-ripe and somewhat damaged thereby when received; the first was fully ripe and in part showed a disposition to dry into raisins; evidently the grapes could have been harvested some time before, say the 15th. They had been heavily sulphured and had to be carefully washed to avoid tainting the wine. The samples agreed well with the description, only the bunches were rather longer and looser than in the figure.

The first lot (No. 28) of 86½ pounds, received and crushed September 22d, began fermentation on the morning of the 24th, reaching its maxi-

temperature of 76.1° F. on the morning of the 25th, then fell to 75.2° in the evening, and so remained for 24 hours, then gradually fell to the cellar temperature of 67° F. on Sept. 30th, when the muck was drawn off, eight days from the crushing; the yield being 7.2 gallons from the above amount, or at the rate of 166.0 gallons per ton. Pomace 13.3 per cent.

Fermentation of the second lot (No. 28 a) of 68 6 pounds, received and crushed Sept. 30, began on the evening of Oct. 2, (temp. 66.2° F) and reached its maximum of 75.4 F. on the evening of Oct. 4; then gradually fell to the cellar temperature of 68 on October 8th, when the muck was drawn off, 9 days from the crushing; the yield being 5.3 gallons from the above amount, or at the rate of 153.9 gallons per ton.

Both wines were racked from the lees on Oct. 23d, and again Nov. 11th and March 25th; the lees being very voluminous.

Record of tasting. Nov. 12, 1884. (Pohndorff.) No. 28. Good, but color less deep than expected.

No. 28 a. Character pretty neutral, but the expression of the Aramon grape predominant. Perfectly sound.

Report of Convention Committee, December 7. Petit Bouschet U. No 28a, of Natoma, V. C. No. 8 of Stockton, and V. C. No. 14, of A. Haraszthy from his Madison Vineyard, all show excellent color, a fine flavor, mellowness in taste, and rich astringency, and doubtless the Petit Bouschet is an improvement upon the Teinturier, of which the Bouschet is a crossing. The grapes at Natoma reached maturity at the middle of September. This vine is a medium bearer and of vigorous growth at Natoma. Its adoption in California vineyards will be desirable, as its usefulness, chiefly for its coloring power, is great; and seemingly an addition of this grape to Port grapes for sweet wines is of value for the utilization of that quality.

Feb. 9, 1885. (Pohndorff.) Petit Bouschet in kegs. One sample (No. 28) in a 3-gallon keg is of fine color and clean taste and bouquet; well preserved and advanced in its development.

Sample in 2-gal. keg (28a): Color somewhat impaired, yet deep ruby; taste and flavor also have suffered from the thinness of the keg staves.

Sample in bottle since Nov. 11th: deep, brilliant color, taste frank and mild, well developed.

April 1, 1885. (E. W. H.) No. 28: Condition bright, color ruby red, quite intense, bouquet, faint but agreeable, astringency and acid fair. Dilutes a little better than No. 28a.

No. 28a: Not entirely clear; color not very intense, little bouquet, a little sulphur perceptible, astringency and acid rather low; does not bear dilution well.

Verdot.

The Verdot belongs exclusively to the vineyards of the Bordeaux region, and is there cultivated in the low grounds, in whose strong, clayey soils this grape yields better products than any other. Is the latest ripening grape of the region, and is on that account always gathered and treated by itself. It is only moderately productive and is therefore mostly pruned long, although it does not resent short pruning. In

its propagation the strongest wood should be carefully selected. The Verdot wine is a good keeper, and is especially esteemed for export.

From Folsom the Verdot is reported to be of medium vigor and a light bearer. Its bunches were considerably more compact than in the figure given in French works. This was found to be very generally the case in the varieties sent from Folsom, and is probably attributable to the youth of the vines. In other respects the grape tallied well with the description. Its maturity, however, was much earlier than reported from France, as it was gathered September 18th, about the middle of the vintage of last year, and was at the time fully ripe. It was thus earlier than the Beclan, Cinsaut, Cabernet Sauvignon, and others, that in France precede it, and simultaneous with Cabernet Franc, Sirah and Petit Bouschet. This is the more remarkable as it was grafted on the stock of a late variety—the Mission. Quite a number of parallel cases may be noted in the series of Folsom grapes; and others are known to occur among our more common varieties. It is thus obvious that many grape blends not practicable in France may be perfectly feasible with us, especially when the differences in the time of ripening that may result from grafting upon the various resistant stocks (referred to in bulletin No. 34) are duly utilized.

The grapes, received on September 20th were crushed the same day, and fermentation began on the evening of Sept. 22d; reached its maximum temperature of 78.8° F. on the morning of Sept. 23d, then fell very gradually to the cellar temperature of 68° F. on the 27th, eight days from the crushing, when the muck was drawn off; the yield from the above amount being 7½ gallons, or at the rate of 158.5 gallons per ton. Pomace 12.0 per cent.

The young wine was racked from the lees on Nov. 15th. Its condition at the time was clear, color intense purple.

Record of Tasting.—Nov. 13, 1884 (Pohndorff): Good in color and taste, slight contamination of sulphur from grapes.

Nov. 18th.—(E. W. H.) Heavy body, astringency rather light; a fruity flavor, promising high quality; acid agreeable.

Report of Viticultural Convention Committee, —Dec. 7th: Verdot, U. 23, shows successfully the fine qualities of the variety, which will necessarily form part of the plantations where the other Medoc varieties are to be grown. The same is true of Merlot, U. 22.

Feb. 9, 1885. (Pohndorff.) Fine color, not very deep; taste much superior to that of Merlot, but has suffered slightly from the thinness of the keg staves.

April 9, 1885. (E. W. H.) The condition of the wine is bright, the color unchanged in quality and intensity. The bouquet has developed decidedly, promising a high quality claret with an agreeable fruitiness. It does not dilute well; with 50 per cent of water its quality is almost lost.

Sample from a vial which has stood half full since Feb. 25th: The bouquet has developed decidedly by oxidation, and the astringency appears increased through the acquisition of slight bitterish taste; the acid also has increased somewhat, but there is no perceptible acetification. The wine has thus resisted the

six weeks' exposure very well, confirming the keeping qualities attributed to it in France.

Personally, the writer is a good deal impressed with the qualities of the Verdot wine as resulting from its culture at Folsom; but the light production of the vine and the low percentage of juice must not be forgotten.

Merlot.

Like the Verdot, the Merlot is altogether a grape of the Bordeaux region, and is planted as well as blended more or less with the better qualities of wines, especially the Cabernets. It matures earlier than the latter, and is therefore planted on northern exposures in order to retard maturity. The very dark-tinted grape is very sweet and agreeable but very delicate, and must be gathered as soon as ripe; the wine also is delicate, lighter than those of the Cabernets, and matures more quickly but does not attain as high quality. It is pruned more or less long according to the vigor of the vine, which is quite productive.

From Folsom the Merlot is reported to be a light bearer, of fair vigor, medium ripening. The grapes were in good condition when received, Sept. 20, and corresponded accurately to the figure, but were unevenly ripened, rather insipid, thick-skinned, and not very juicy.

Fermentation of the 50.6 pounds received Sept. 20th and crushed the same day, began on the evening of Sept. 22d, at the temperature of 69.8° F., and reached its maximum temperature of 75.2° the next morning, remaining thus for about 24 hours, then gradually fell to the cellar temperature of 68° F. on Sept. 27th, when the murk was drawn off, 7 days from the crushing, showing a quick and energetic fermentation. The yield from the above amount was 4.03 gallons, or at the rate of 159.3 gallons per ton, pomace, 14.35 per cent.

The young wine was racked from the lees on Nov. 25th, but there is no record of its having been tasted at the time.

For *Viticultural Convention Committee* report on the same, see above under Verdot.

Feb. 9, 1885. (Pohndorff.) Sample in (3-gallon) keg: Color, somewhat faded; taste, characteristic; development, tardy; no injury from thin staves.

Sample in vial: Good color and proper development; good clean taste.

April 10, 1885 (E. W. H.) Condition, bright; color, light red, apparently still more faded; faint but agreeable bouquet; acid and astringency moderate but well proportioned. Good, but decidedly inferior to Verdot. Like the latter, it does not dilute well.

In judging of the relative merits of Verdot and Merlot from Folsom, it should not be forgotten that while the former found there its habitual location in low ground, the latter, adapted to the hilly lands, was somewhat out of its place.

The subjoined table shows the main points in the composition of the musts and wines above described:

| MUST. | | | | | | |
|-------|-----------------|-----------------------------|-------------------------------|--------------------------------|--------------------------------|-------------------|
| No. | Variety. | Date of Receiving Grapes... | Solid Contents by Spindle.... | Acid as Tartaric, of Must..... | Acid as Tartaric, of Murk..... | |
| 30 | Cinsaut..... | Sept. 25 | 23.940 | .528 | .381 | |
| 28 | Petit Bouschet. | Sept. 22 | 20.610 | .465 | .420 | |
| 28 a | Petit Bouschet. | Sept. 30 | | .503 | | |
| 23 | Verdot..... | Sept. 20 | 23.040 | .656 | .617 | |
| 22 | Merlot..... | Sept. 20 | 20.660 | .472 | .498 | |
| WINE. | | | | | | |
| No. | Variety. | Body..... | Alcohol by Weight..... | Alcohol by Volume..... | Tannin..... | Acid as Tartaric. |
| 30 | Cinsaut.... | 2.600 | 10.440 | 12.900 | .070 | .490 |
| 28 | P. Bouschet | 2.436 | 8.840 | 11.000 | .089 | .583 |
| 28 a | P. Bouschet | 2.865 | 9.270 | 11.550 | .117 | .493 |
| 23 | Verdot.... | 2.765 | 9.780 | 11.820 | .071 | .438 |
| 22 | Merlot.... | 2.435 | 9.200 | 11.420 | .065 | .467 |

It will be seen from the above table that the Cinsaut had in a season of low sugar and alcohol percentages attained a very respectable figure, exceeded only by the Sirah and some Sherry varieties. The Petit Bouschet, gathered a day later but not crushed until five days after the Cinsaut, remains considerably behind the latter, as do also the Bordeaux varieties.

In the matter of tannin the Cinsaut, Verdot and Merlot run near together and rather low; while the Bouschet ranges in its average near to or a little above the Sirah, shows about double the amount in the Aramon, one of its ancestor, and nearly as high as its other ancestor, the Teinturier. In acid, also, the Bouschet ranges pretty high, and thus promises a wide usefulness for blending, even apart from its high color and good flavor.

Of the two Bordeaux varieties, the Verdot ranges closely with the Cabernets in all respects, while the Merlot shows its lighter character both in body and alcoholic strength; entirely in accord with its reputation in France. Its uneven maturing as above noted may account for its inferiority to the Verdot in the kind and amount of bouquet.

Berkeley, April 17, 1885. E. W. HILGARD.